Beyond Use Dating: In More Detail

TXCH Global HOPE

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Objectives

By the end of this presentation, the participant should be able to:

- Differentiate between expiration dates and beyond use dates
- Define low, medium, high risk level for compounded sterile products
- Apply beyond use dating to products in your pharmacy

Beyond Use Date *vs* Expiration Date

- **Beyond Use Date (BUD)**
  - The time and date beyond which a compounded preparation must not be used
- **Expiration date**
  - The date which the original conventionally manufactured product can be expected to maintain quality, provided it is kept under the specified storage conditions

Beyond Use Date (BUD)

- Concept that recognizes the probability that a product may become contaminated, even under ideal storage and handling conditions
  - BUD target is <0.1% (1 contaminated dose per 1,000 prepared)
- Determined by 2 factors:
  - Compounded sterile product risk level, typically obtained from recognized guidance, such as United States Pharmacopoeia (USP) <797>
  - Expiration date of all included products (if shorter)
- All products should be clearly labeled with the BUD following final preparation

Compounded Sterile Product Risk Levels

- Risk level is based on the potential for the compounded sterile product (CSP) to become contaminated during compounding
- USP<797> identified 3 levels of risk:
    1. Low risk
    2. Medium risk
    3. High risk

Low Risk CSP

- Medication prepared as a single dose which does not contain more than 3 sterile ingredients (including diluent)
- Examples:
  - Stat doses and clinical doses
  - Reconstitution of single dose antibiotic vial

Low Risk BUD: 2 Groups

Low Risk

- Room temperature (20°C to 25°C): **48 hours**
- Refrigerated (2°C to 8°C): **14 days**
- Freezer (-25°C to -10°C): **45 days**

Modified Low Risk*

- Room temperature (20°C to 25°C): **12 hours**
- Refrigerated (2°C to 8°C): **12 hours**
- Freezer (-25°C to -10°C): ***not applicable***

**Modified Low* = a risk level for a setting without ideal environmental controls for aseptic preparation; e.g., a contained segregated compounding area (ventilated hood, but no cleanroom) instead of ideal engineering controls. Unique SOPs for cleaning and environmental sampling this specific setting are required*

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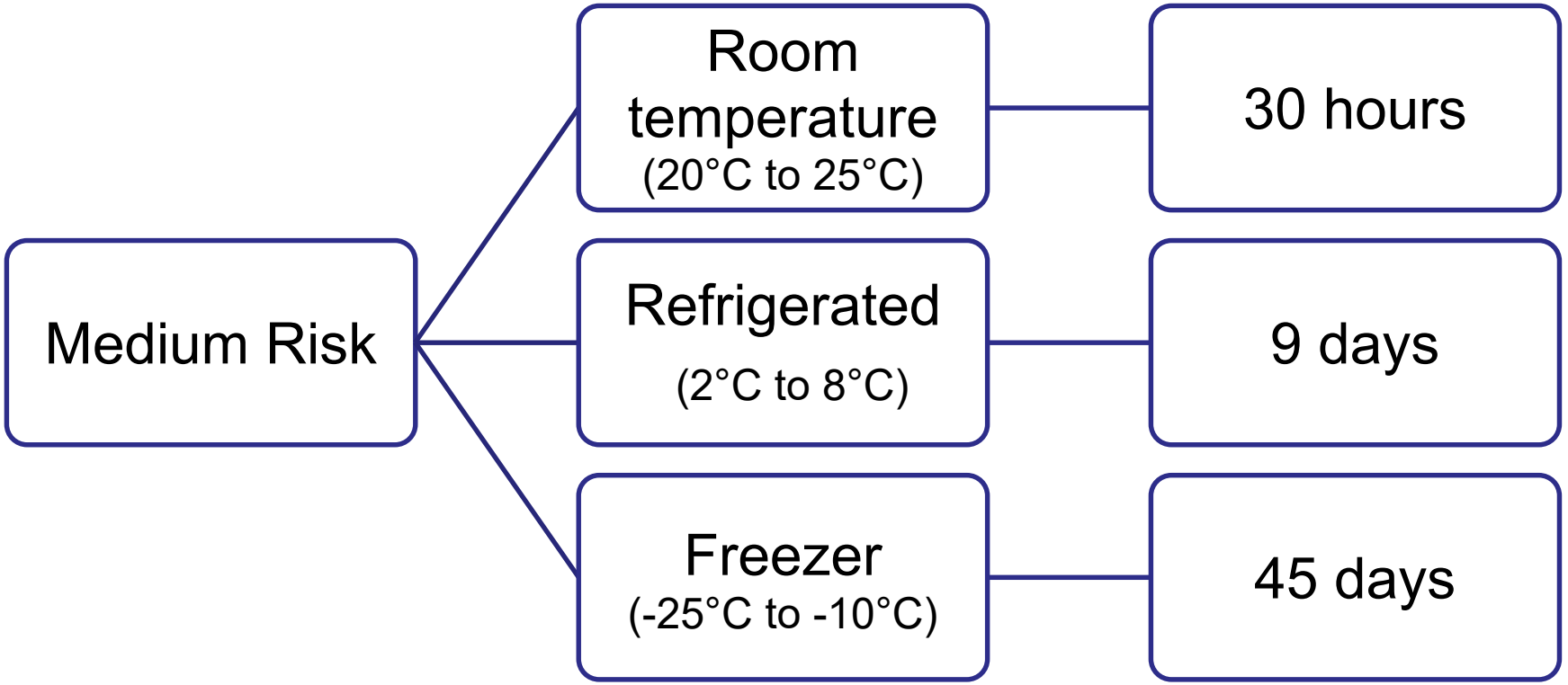
Medium Risk CSP

- Medications prepared by a “batch”
  - Multiple doses prepared serially for multiple patients and/or several doses for a single patient
- Single dose formulations with more than 3 ingredients
- Must be prepared under ideal aseptic conditions
  - ISO5 biosafety cabinet and ISO7 room
- Examples:
  - Batch prepped IV ondansetron for multiple patients
  - Parenteral nutrition

Medium Risk BUD



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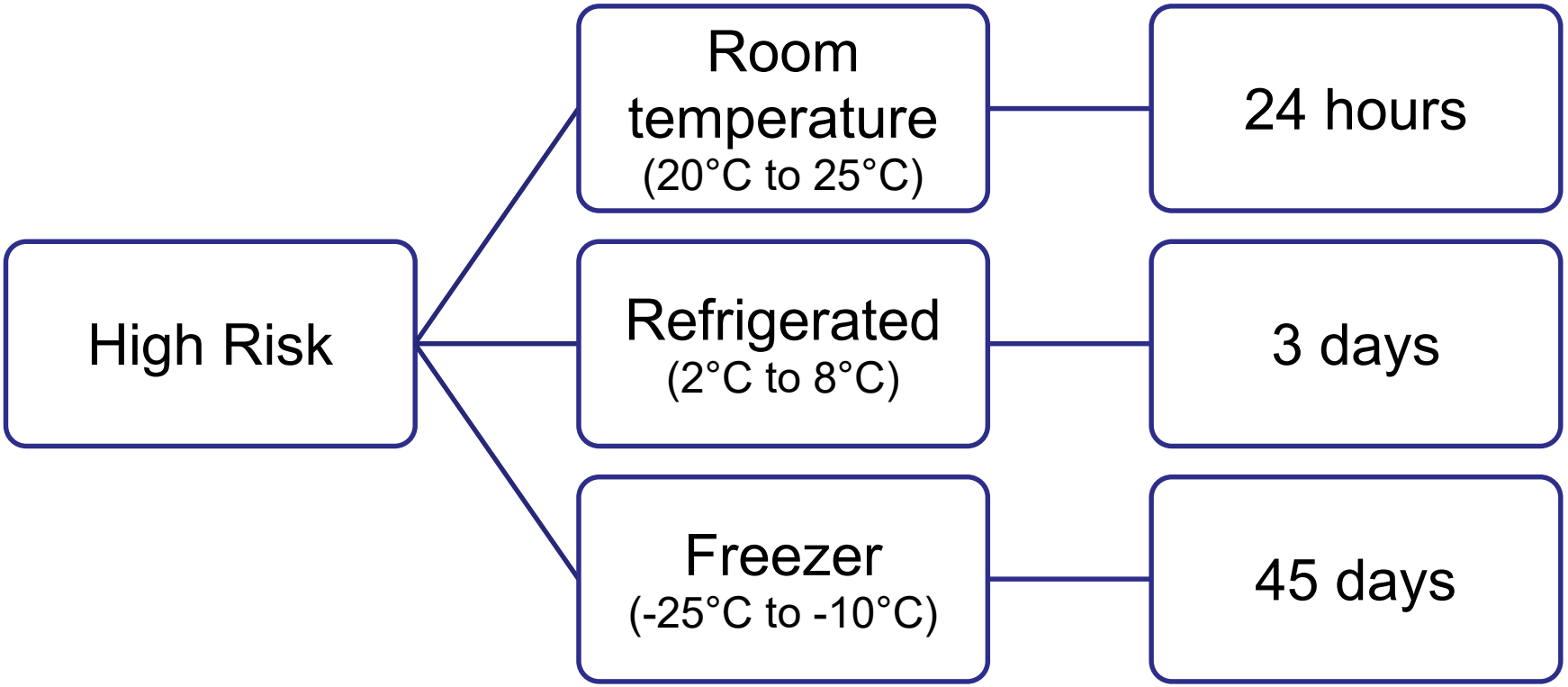
High Risk CSPs

- Products which are:
  - Prepared from non sterile ingredients which are then sterilized by filtration
  - Sterile CSPs prepared in air quality worse than ISO Class 5

- Examples:
  - Injectable sodium bicarbonate prepared by powder, then subsequently sterilized
  - Antibiotics in multi-dose vials prepared outside the pharmacy (i.e., by nursing)

High Risk BUD



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Summary of BUDs by CSP Risk Level

May shorten based on the type of clean room and implementation of USP<800>

Risk Level	Room Temp (20 to 25ºC)	Refrigeration (2 to 8ºC)	Frozen Storage (-25 to -10ºC)
Immediate	1 hour	N/A	N/A
Modified Low*	12 hours	12 hours	N/A
Low	48 hours	14 days	45 days
Medium	30 hours	9 days	45 days
High	24 hours	3 days	45 days

**Modified Low* = a risk level for a setting without ideal environmental controls for aseptic preparation; e.g., a contained segregated compounding area (ventilated hood, but no cleanroom) instead of ideal engineering controls*

Once the storage conditions are changed, the BUD must also be changed (e.g., removing a product from a freezer to room temperature requires an updated BUD)

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Intravenous Bag BUD

- IV solution bags are labeled with an expiration date from the manufacturer

- However, once an IV bag is removed from the wrapper (unspiked) a new BUD must be applied due to the change in storage conditions
  - *Due to the potential risk of loss of product through the plastic bag when exposed to room air*
  - *If additives are introduced into the bag, a revised BUD must be applied based on the BUD guidance for the CSP risk level*

Volume	Beyond Use Date
50 mL or less	15 days
100 mL to 1000 mL	30 days

Additional In-Pharmacy BUD

Some products kept and maintained under proper storage conditions in the pharmacy may be provided alternate BUD (prior to further manipulation/dispensing)

Product	BUD
Injectable given as an oral liquid (e.g., etoposide)	14 days
Multi-dose vials (e.g., regular insulin)	28 days
Irrigation solution (e.g., 0.9% sodium chloride for irrigation)	30 days
Distilled water	30 days
Isopropyl alcohol	Manufacturers expiration

Chemotherapy BUD Specifics

- Global HOPE Pharmacy Division has a guidance chart of BUD for commonly used chemotherapy
  - Package labeling of product on hand should be referenced to ensure storage conditions are correct, as products may vary by manufacturer
  - Pharmacy preparation conditions may necessitate further changes to the BUD (i.e., shortening of the BUD)
- Institutional, local, and regional guidance and regulations must also be followed

What's Next?

- Complete practice questions
- Review answer file

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